

REMARKS

Claims 1-3, 5-12 and 14-29 are pending in this application, of which claims 1, 10, 19, 23, and 27 are independent. Applicants amend claims 1, 2, 5-8, 10-11, 14-17, 19, 23, and 27, herein. Support for the amendments can be found throughout the Application as originally filed, and specifically at page 7 line 23 through page 8 line 10, and page 10 lines 14-22. No new matter has been added.

Applicants respectfully submit that all of the pending claims are in condition for allowance, and respectfully request reconsideration of the outstanding rejections and allowance of all pending claims in view of the reasons set forth below.

I. Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-3, 5-12, and 14-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,114,149 to Aptus et al. (hereafter “Aptus”) in view of U. S. Patent No. 7,099,809 to Dori (hereafter “Dori”), and further in view of U.S. Patent No. 6,961,686 to Kodosky (hereafter “Kodosky”). Applicants respectfully traverse the rejection.

A. Claims 1-3 and 5-9

Applicants’ independent claim 1 recites:

1. An electronic device implemented method for generating a code generation report from a simulatable block diagram model comprising a plurality of graphical elements, the simulatable block diagram model provided in a modeling environment, the method comprising:
 - creating a source model representation of the block diagram model in a first language;
 - generating source code in a second language from the source model representation using a code compiler, the second language being distinct from the first language, ***wherein the generated source code includes one or more comments in the second language that include a block path identifying a section of the source model representation represented in the first language that corresponds to an element in the block diagram model;***
 - generating a code generation report from the generated source code using a report compiler, the generating of the code generation report comprising:
 - parsing, using the report compiler, the one or more comments in the generated source code to identify the block path, and
 - replacing the block path with a hyperlink that refers to the element

of the block diagram model that corresponds to the section of the source model representation identified by the block path, the hyperlink linking from the code generation report to the element in the block diagram model, ***the hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the block diagram model***; and displaying the code generation report to a user.

Applicants respectfully submit that Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest at least the following features of claim 1: (1) ***wherein the generated source code includes one or more comments in the second language that include a block path identifying a section of the source model representation represented in the first language that corresponds to an element in the block diagram model***; and (2) ***the hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the block diagram model***.

1. None of Aptus, Dori, or Kodosky disclose or suggest that *the generated source code includes one or more comments in the second language that include a block path identifying a section of the source model representation represented in the first language that corresponds to an element in the block diagram model*

In order to further clarify the claims, Applicants amend the independent claims herein to recite that the block diagram model is represented ***in a first language***, and the source code is provided ***in a second language, the second language being distinct from the first language***. For example, the first language may be (but is not limited to) Simulink from the MathWorks, Inc., whereas the second language may be (but is not limited to) C, C++, or Java.

Thus, the claims recite two distinct languages. The generated source code includes ***one or more comments in the second language***, and the comments identify a section of the source model representation that is ***in the first language***. Applicants respectfully submit that none of the cited references disclose or suggest that ***the generated source code includes one or more comments in the second language that include a block path identifying a section of the source model representation represented in the first language that corresponds to an element in the block diagram model***.

Aptus is generally directed to a system which generates HTML documentation for source code in a software project (Aptus at Abstract). The Examiner cites the comments of Aptus at

columns 21-23, and Figures 20, 24, and 25. More specifically the Examiner cites the @see parameter provided in Aptus' comments, which the Examiner asserts is the equivalent of a "block path." Although Applicants respectfully disagree, Applicants note that Aptus' use of the @see parameter does not meet the language requirements of claim 1.

Claim 1 recites two distinct languages, the source code being written in one language and the block path referencing a section of another, different language. In Aptus, the @see parameter, is written in comments in Java code, and refers to the "MyThread" class (see Aptus at Figure 24). The MyThread class is another class written in the same language (Java) as the commented @see parameter. That is, whereas claim 1 requires a comment in a second language (e.g., C++) that includes a reference a section of a first language (e.g., Simulink), Aptus provides only a reference from a portion of Java code to a related portion of the same Java code.

Although Aptus does reference a second language that is used in the course of documentation (i.e., HTML), the use of HTML in conjunction with Java also does not read on the specific features of claim 1. Claim 1 requires that the first language correspond to the source model representation of the block diagram model, while the second language corresponds to the source code generated from the block diagram model. While Aptus includes source code (written in Java), the HTML used in Aptus does not correspond to a ***source model representation of a block diagram model*** and therefore does not correspond to the ***first language*** of claim 1.

Moreover, even if the HTML of Aptus could be construed as the "first language" of claim 1, the claims also recite that the ***comments in the second language that include a block path identifying a section of the source model representation represented in the first language that corresponds to an element in the block diagram model***. That is, in claim 1 there is a reference from a comment written in source code (the second language) to a portion of a representation written in the first language. In contrast, the @see parameter is a reference from the source code (the second language) to another portion of the source code (the second language); the @see parameter does not refer to another, distinct language.

Accordingly, Aptus does not disclose or suggest that ***the generated source code includes one or more comments in the second language that include a block path identifying a section***

of the source model representation represented in the first language that corresponds to an element in the block diagram model.

Dori also does not disclose or suggest that *the generated source code includes one or more comments in the second language that include a block path identifying a section of the source model representation represented in the first language that corresponds to an element in the block diagram model.* Dori is generally directed to techniques for generating textual descriptions of a graphical model (Dori at Abstract). Dori discusses the generation of source code beginning at column 15, line 62. However, in the examples of generated source code in Dori (see, e.g., Figures 32-35), no comments are provided in a second language that refer back to a portion of a representation written in another, distinct language. Therefore, Dori cannot disclose or suggest that *the generated source code includes one or more comments in the second language that include a block path identifying a section of the source model representation represented in the first language that corresponds to an element in the block diagram model*, as required by claim 1.

Kodosky is generally directed to the generation of a hardware implementation for graphical code (Kodosky at Abstract). Kodosky provides samples of code generated according to his invention at columns 23-33. In the examples provided, comments are included in the generated code (see, e.g., column 30, “check for loop completion”). However, none of the comments written in a second (e.g., source code) language refer back to any representation written in a first language that is distinct from the second language, which is present in claim 1. Therefore, Kodosky does not disclose or suggest that *the generated source code includes one or more comments in the second language that include a block path identifying a section of the source model representation represented in the first language that corresponds to an element in the block diagram model*, as required by claim 1.

2. None of Aptus, Dori, or Kodosky disclose or suggest *the hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the block diagram model*

Applicants respectfully submit that none of the cited references disclose or suggest *the hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the block diagram model*, which is present in claim 1. For

instance, page 10 of the present application provides an example whereby an executable command is embedded in the hyperlink (e.g., “model/BlockA”). The specification notes that the command may be executed in the model diagram environment if the user selects the hyperlink.

Applicants respectfully submit that none of the cited references provide a hyperlink having *a command that is executable in the modeling environment, the command relating to the element in the block diagram model*. Each of the cited references is silent with respect to this feature of claim 1.

For at least these reasons, Applicants respectfully submit that Aptus, Dori, and Kodosky, alone or in any reasonable combination, does not disclose or suggest each and every element of independent claim 1. Claims 2-3 and 5-9 depend from claim 1 and therefore include each and every element of claim 1. Thus, Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest each and every element of claims 2-3 and 5-9. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 1-3 and 5-9 under 35 U.S.C. § 103(a).

B. Claims 10-12 and 14-18

Applicants’ independent claim 10 recites:

10. A system for generating a code generation report from a simulatable block diagram model comprising a plurality of graphical elements, the simulatable block diagram model provided in a modeling environment, the system comprising:

means for creating a source model representation of the block diagram model in a first language;

means for generating source code in a second language from the source model representation, the second language being distinct from the first language, *wherein the generated source code includes at least one comment in the second language that includes a block path, the block path identifying a section of the source model representation represented in the first language that corresponds to a block in the block diagram model*;

means for generating a code generation report from the generated source code, the generating of the code generation report parsing the at least one comment in the generated source code to identify the block path and replacing at least a portion of the at least one comment with at least one hyperlink that refers to an element of the block diagram model that corresponds to the section of the source model representation identified by the block path, the hyperlink linking

from the code generation report to the element of the block diagram model, ***the hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the block diagram model;***
and

an output device for displaying the code generation report to a user.

Applicants respectfully submit that Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest ***wherein the generated source code includes at least one comment in the second language that includes a block path, the block path identifying a section of the source model representation represented in the first language that corresponds to a block in the block diagram model***, nor that ***the hyperlink comprises a command that is executable in the modeling environment, the command relating to the element in the block diagram model***, which are present in claim 10.

As discussed above, there is no comment provided in any of Aptus, Dori, or Kodosky where the comment is written in a second (e.g., source code) language and the comment refers back to a portion of a representation written in a first language that is distinct from the second language. In Aptus, there is a comment written in Java that includes a reference to another portion of the same Java code, but no reference to a portion of code written in another, distinct language. Both Dori and Kodosky are also silent with respect to this feature of claim 10.

Furthermore, none of Aptus, Dori, and Kodosky include ***a hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the block diagram model***. There is no executable command provided in any of the cited hyperlinks.

Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest each and every element of independent claim 10. Claims 11-12 and 14-18 depend from claim 10, and therefore include each and every element of claim 10. Thus, Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest each and every element of claims 11-12 and 14-18. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the 35 U.S.C. §103(a) rejection of claims 10-12 and 14-18.

C. Claims 19-22

Applicants' independent claim 19 recites:

19. A computer program product residing on a computer readable medium having instructions stored thereon for generating a code generation report from a simulatable block diagram model comprising a plurality of graphical elements, the simulatable block diagram model provided in a modeling environment, the instructions when executed by one or more processors cause the one or more processors to:

create a source model representation of the block diagram model in a first language;

generate source code in a second language from the source model representation, the second language being distinct from the first language, ***the generated source code including at least one comment in the second language that includes a block path, the block path identifying a section of the source model representation represented in the first language that corresponds to a block in the block diagram model;***

generate a code generation report from the generated source code, the generating of the code generation report parsing the at least one comment in the generated source code to identify the block path and replacing at least a portion of the at least one comment with at least one hyperlink that refers to an element of the block diagram model corresponding to the section of the source model representation identified by the block path, the hyperlink linking from the code generation report to the element of the block diagram model, ***the hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the block diagram model;*** and

display the code generation report to a user.

Applicants respectfully submit that Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest that ***the generated source code includes at least one comment in the second language that includes a block path, the block path identifying a section of the source model representation represented in the first language that corresponds to a block in the block diagram model,*** nor that ***the hyperlink comprises a command that is executable in the modeling environment, the command relating to the element in the block diagram model,*** which are present in claim 19.

As discussed above, there is no comment provided in any of Aptus, Dori, or Kodosky where the comment is written in a second (e.g., source code) language and the comment refers back to a portion of a representation written in a first language that is distinct from the second language. In Aptus, there is a comment written in Java that includes a reference to another

portion of the same Java code, but no reference to a portion of code written in another, distinct language. Both Dori and Kodosky are also silent with respect to this feature of claim 10.

Furthermore, none of Aptus, Dori, and Kodosky include *a hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the block diagram model*. There is no executable command provided in any of the cited hyperlinks.

Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest each and every element of independent claim 19. Claims 20-22 depend from claim 19, and therefore include each and every element of claim 19. Thus, Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest each and every element of claims 20-22. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the 35 U.S.C. §103(a) rejection of claims 19-22.

D. Claim 23-26

Applicants' independent claim 23 recites:

23. A computing system for generating a code generation report from a simulatable block diagram model comprising a plurality of graphical elements, the simulatable block diagram model provided in a modeling environment, the system comprising:
a processor and
a memory,
wherein the processor and memory are configured to:
create a source model representation of the block diagram model in a first language;
generate source code in a second language from the source model representation, the second language being distinct from the first language, *the generated source code including at least one comment in the second language including a block path that identifies a section of the source model representation represented in the first language that corresponds to a block in the block diagram model*;
generate a code generation report from the generated source code, the generating of the code generation report parsing the at least one comment in the generated source code to identify the block path and replacing at least a portion of the at least one comment with at least one hyperlink that refers to an element of the block diagram model corresponding to the section of the source model representation identified

by the block path, the hyperlink linking from the code generation report to the element of the block diagram model, ***the hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the block diagram model***; and display the code generation report to a user.

Applicants respectfully submit that Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest ***the generated source code including at least one comment in the second language including a block path that identifies a section of the source model representation represented in the first language that corresponds to a block in the block diagram model***, nor ***the hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the block diagram model***, which are present in claim 23.

As discussed above, there is no comment provided in any of Aptus, Dori, or Kodosky where the comment is written in a second (e.g., source code) language and the comment refers back to a portion of a representation written in a first language that is distinct from the second language. In Aptus, there is a comment written in Java that includes a reference to another portion of the same Java code, but no reference to a portion of code written in another, distinct language. Both Dori and Kodosky are also silent with respect to this feature of claim 10.

Furthermore, none of Aptus, Dori, and Kodosky include ***a hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the block diagram model***. There is no executable command provided in any of the cited hyperlinks.

Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest each and every element of independent claim 23. Claims 24-26 depend from claim 23, and therefore include each and every element of claim 23. Thus, Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest each and every element of claims 24-26. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the 35 U.S.C. §103(a) rejection of claims 23-26.

E. Claims 27-29

Applicants' independent claim 27 recites:

27. An electronic device implemented method for generating a document having information about source code associated with a graphical model, the graphical model provided in a modeling environment, and providing a hyperlink referencing an element of the graphical model in the document, the method comprising the steps of:

- creating a source model representation of the block diagram model in a first language;
- providing source code identifying an element of the graphical model, the source code provided in a second language that is distinct from the first language, wherein the graphical model is a simulatable graphical model represented, ***the source code including at least one comment in the second language including a block path that identifies a section of the source model representation represented in the first language, the block path corresponding to a block in the graphical model;***
- generating a document from the source code, the generating of the document parsing the at least one comment in the generated source code to identify the block path and replacing at least a portion of the at least one comment with at least one hyperlink that refers to an element of the graphical model corresponding to the section of the source model representation identified by the block path, the at least one hyperlink linking from the document to the element of the graphical model, ***the hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the graphical model;*** and
- displaying the document to a user.

Applicants respectfully submit that Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest that ***the source code including at least one comment in the second language including a block path that identifies a section of the source model representation represented in the first language, the block path corresponding to a block in the graphical model,*** nor ***the hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the graphical model,*** which are present in claim 27.

As discussed above, there is no comment provided in any of Aptus, Dori, or Kodosky where the comment is written in a second (e.g., source code) language and the comment refers back to a portion of a representation written in a first language that is distinct from the second language. In Aptus, there is a comment written in Java that includes a reference to another portion of the same Java code, but no reference to a portion of code written in another, distinct language. Both Dori and Kodosky are also silent with respect to this feature of claim 10.

Furthermore, none of Aptus, Dori, and Kodosky include *a hyperlink comprising a command that is executable in the modeling environment, the command relating to the element in the graphical model*. There is no executable command provided in any of the cited hyperlinks.

Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest each and every element of independent claim 27. Claims 28-29 depend from claim 27, and therefore include each and every element of claim 27. Thus, Aptus, Dori, and Kodosky, alone or in any reasonable combination, do not disclose or suggest each and every element of claims 28-29. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the 35 U.S.C. §103(a) rejection of claims 27-29.

CONCLUSION

In view of the above, Applicants respectfully submit that the pending application is in condition for allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicant's attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. MWS-042RCE4. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

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